

FOREST CONTROL

A
13.22
In 81
117

by CONTINUOUS INVENTORY

"Today I have grown taller from walking
with the trees."

...Karle Wilson

Milwaukee, Wis. December, 1963 No. 117

A CHRISTMAS GIFT

The little boy often watched his Grandfather read the Bible. It was not easy to read. The print was fine, the pages worn, and the eyes of the earnest reader certainly were growing very, very old.

Christmas was just around the far corner of the year, and so the little boy decided to buy his Grandfather a new Bible. It would be a book with big print; one that could be read without a reading glass.

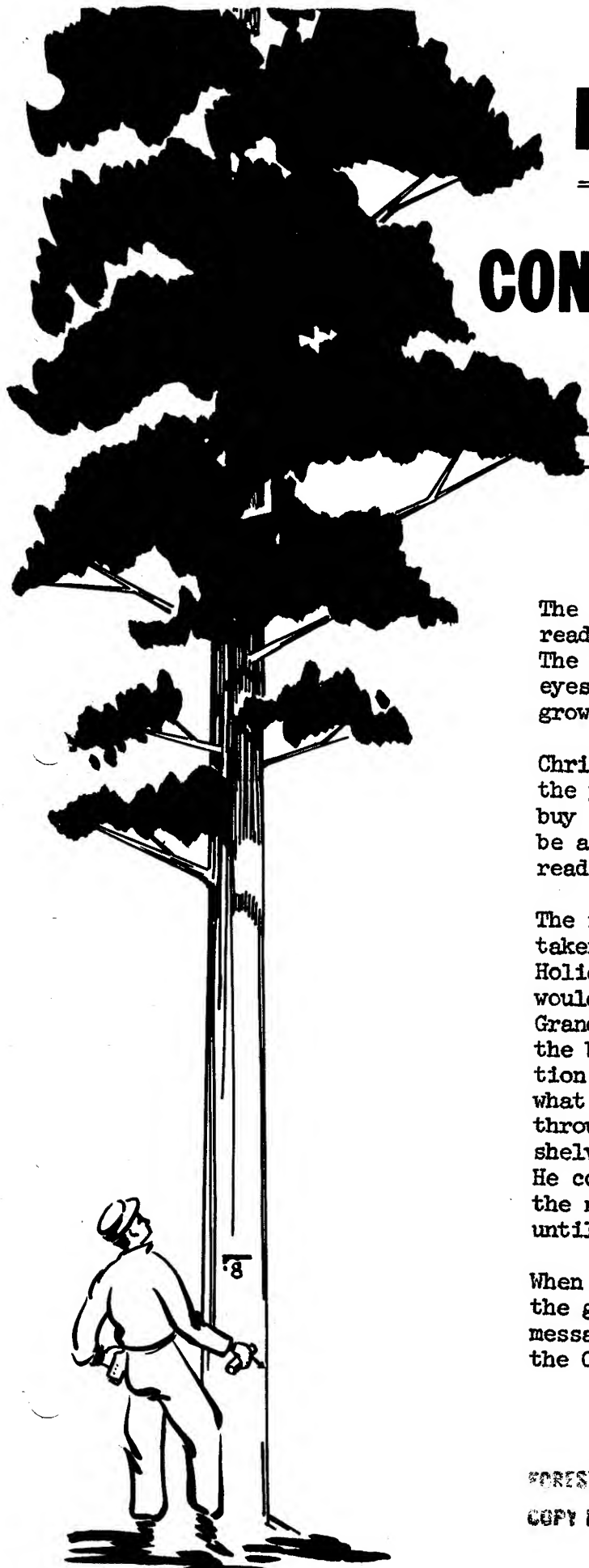
The new Bible was soon found, purchased and taken home to be hidden until the Great Holiday. On the way home the boy thought it would be nice if he wrote something his old Grandfather would like in the front page of the book. Although his little boy's imagination was quite good he just could not think what to say. When he reached home he looked through every book on the reading room shelves. Finally he found something suitable. He copied it carefully on the fly leaf of the new Bible, wrapped it up and hid it until the morning of Christmas.

When the little boy's Grandfather unwrapped the gift on Christmas morning he read this message from his Grandson. "To Grampa, With the Compliments of the Author."

Anonymous

FORESTRY SCHOOL LIBRARY

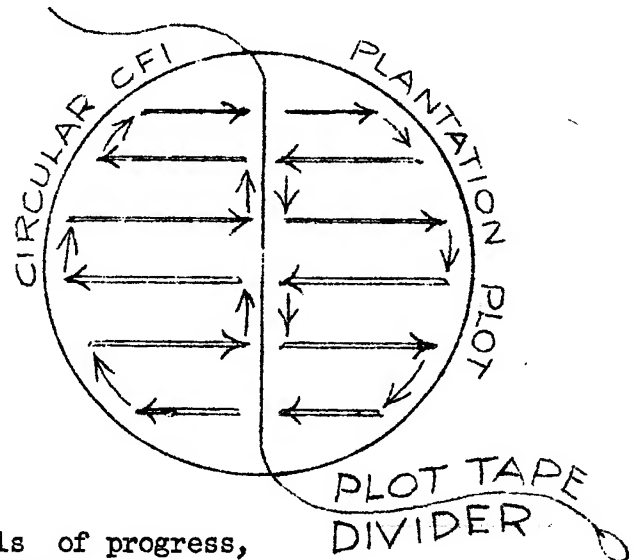
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MOSINEE PAPER MILLS COMPANY COMPLETES 556 CFI PLOTS

Six cruisers have worked 258 crew days to establish the Mosinee CFI system on 80,000 acres of forest land in northern Wisconsin. An average of 65 trees, or 2.2 seventh-acre plots were handled during the average working day by a two-man crew. Max Fulton, forester in charge of checking and supervision, reported that more than half of the plots fell in the jack pine monotype. Many plantation plots were recorded. Within these samples the trees were sequentially numbered in rows as shown in the diagram. Each plot was divided and tallied in clockwise quadrants using the plot tape as a divider across the rows.

The tree tally in this inventory began at 3.56" DBH instead of the customary 4.96". About 17,000 individual Port-A-Punched tree cards were completed. Card checking and computing are now underway at the Business Data Processing Center in Duluth, Minnesota. All machine work will be done on the 1401 EDP computer.



To engage the wheels of progress,
make up your mind that the gears
are intricate and complex, involv-
ing every tangible and intangible
facet of human understanding.

SOME OLD TIMERS ARE STILL USING FIFTH-ACRE PLOTS

Any why not? Fifth-acre plots sample the complete ecological system. They give us an environmental picture of the woods which we inventory. We are not merely making a tally of individual trees, mind you. We are collecting correlations. We are recording dimensions and conditions of interlocking individuals in a living, growing, changing community of trees. With fixed radius samples we accumulate a sound measure of the history of forest tree associations. It's about time scientific foresters begin to stress the fundamental importance of ecosystem sampling in permanent forest inventory.

It is a strange canard of some in government service that others are doing work below their established grade levels. Mere grade levels must never interfere with essential ditch digging operations. When the boss must dig ditches, the blunder is organizational, not personal.

REMEASUREMENT COMPLETED BY MEAD CORPORATION

Foresters of the Escanaba Division of the Mead Corporation in Michigan have contributed much of their time to CFI since July, 1963. They have remeasured 410-seventh-acre circular plots at an approximate rate of 2.8 plots per two-man crew day. The plots are in pairs 15 chains apart, within each NW NW forty owned by the Corporation. Port-A-Punch cards totalling 14,500 have been completed in the field, and now await data processing with the larger electronic computer.

General comments from the cruisers are interesting. They report that cutting practices on the 123,000 acre area were similar both within and outside of all CFI plots. Five of the plots were established in the wrong forties five years ago, two plots were lost due to land sales, and two plots were established on newly acquired land. These 9 plots will be excluded from growth calculations.

Tree numbering with paint tubes was fully satisfactory, and a great improvement over Eagle Oiler tree numbering. Most of the original numbers, however, were still legible and few of them had to be replaced.

Foresters should not permit the rigid scientific method, with its reams and reels of processed data, to strain out all natural forest relationships.

BUSINESS DATA PROCESSING CENTER SENDS AGENT TO WOODS

Bill Heimbaugh, account representative for the Duluth, Minnesota Business Data Processing Center, came to the woods in October to see CFI in the making. He spent time on two of the regional cases.

This background of woods experience should be helpful to him in the processing of the Company's current CFI cases. Bill's woods adventures have been helpful to us too, for he left with us a copy of the Mosinee-error check program with flow diagrams. Companies planning to error check 80-column tree detail cards will find this program helpful. Built for the 1401 computer, the program will be available here on call.

In a sense there is continuous communication between trees and their environment. The hard-headed data analyst should not miss this ecosystemic interchange, for it is most important in the practice of the silvicultural arts.

SAFETY ITEM - USE MORE CARE IN 1964

Ivan Kronberg, Forester for the Oliver Iron Mining Division of U. S. Steel, was chaining a course while establishing CFI plots near Norway, Michigan. A storm was approaching. He reached the end of the two-chain steel tape and started to tie a strip of blue plastic to a branch as a marker. In one hand he held an 18-inch leather thong attached to the steel tape. Lightning flashed. He found himself several feet away on his back. He had numb arms but apparently suffered no injury. The thong is a regular attachment to the chain... in this instance it served as a lifesaver.

UNITED STATES BUREAU OF INDIAN AFFAIRS REMEASURES 575 PLOTS

The Red Lake Reservation

Foresters have finished the remeasurement of 462 permanent, fifth-acre sample plots in far northwestern Minnesota. Completed at the rate of 2.4 plots per crew day, more than 18,000 Port-A-Punch cards now await 1401 data processing this winter.

Special features are reported upon by C. T. Eggen of the Minneapolis office of the Bureau. Plots in non-productive lowland marsh grass and brush numbered 371. These were not re-examined although established either as staked plots or photo points at the first measurement.

The crews reported homogenous cutting practices within and outside all plots. They relocated all plots without difficulty. Six starting points were obliterated by new road rights-of-way but paint lines to the plots, made with an Eagle Oiler at measurement 1, were plainly visible. The marks, when made with oil base paint and white lead, were toxic to young, smooth-barked aspen. Scar tissue formed under the DBH marks and numbers. Paint tubes worked very well for lettering and numbering.

The Lac du Flambeau Reservation

Accelerated Public Works programs have delayed the completion of the Flambeau project until the spring of 1964. About 135 out of 268 fixed radius plots remain to be finished before growing season starts next year.

The two crews report that crisscrossed Eagle Oiler paint marks on the line trees were easiest to find and follow to the plots. The card directions were not always too explicit, but all plots have been found and remeasured at a rate of 2.3 per crew day. Original length measurements were erratic but current use of the U-gauge is correcting this discrepancy. One of the original cruisers culled the trees far too heavily and corrections were necessary.

Special Credit

Charles Bullard at Red Lake and Phil Wallace at the Flambeau had charge of the CFI field work and did much cruising. These men deserve special praise and credit for handling this demanding job and a heavy load of regular and emergency assignments to boot. The U. S. Bureau of Indian Affairs badly needs a specialist on this inventory control work.

No one can improve on the bounded circular sample for adequately measuring the many interlocking and competing natural forces in the forest.

MENOMINEE ENTERPRISES INCORPORATED CONVERTS TO UNSTRATIFIED CFI

The old Menominee Indian Reservation at Neopit, Wisconsin has made two great conversions in the past few years. The first of these resulted in the liberation of the people from governmental supervision. The 230,000 acre forest area, with roughly a billion board feet of sawlog timber, is now a private enterprise. The second conversion replaces an inventory prestratified by cutting blocks, with a new inventory completely unstratified.

Six two-man crews handled the 920 plot inventory during most of the season, part of the working force having been contributed by the Wisconsin Conservation Department, and part of it employed by the Corporation. Direction of the work was given to Carl Hakenson, forester for Menominee Enterprises, with assistance in supervision and checking by the State of Wisconsin and the U. S. Forest Service.

Fifth-acre samples completed per crew day averaged 1.6 plots, within which there were 60 trees 4.96" DBH and larger. The timber ran heavy to sawlogs. All trees were tall, requiring time-consuming relaskop measurements. Sawlog trees were graded for quality and all trees were classified by vigor and risk. A basal area control tally was manually made from the Port-A-Punch cards for each plot. Cut and leave decisions were based on a direct examination of each tree.

There will be about 33,000 trees for machine computation and compilation in accordance with data processing plans prepared in advance of the field work. The three cooperating agencies will work together on the preparation of the tabular results and their analysis.

We speak of the forest as an ecosystem. We admit that the ecological concept is important in forestry. Then we permit ourselves to be drawn into the maelstrom of forest census methods which ignore and bypass tree associations. Is this not the strangest paradox of professional forestry?

A FLORIDA LETTER WARMS UP THE NORTHERN LAKE STATES

"We switched from using hypsometers on measurement 1 to 'Stott's Idiot Stick' with caliper at the second measurement 3 years later. We error punched all M1 height measurements that were greater than at measurement 2, and you can well picture that they were fairly numerous. The 'Idiot Stick' with caliper will be standard equipment from now on."

OUR CO-WORKER JIM HOOL BACK AT PURDUE TO FINISH HIS DOCTORATE

After a most productive season of woods, office and machine work, Jim Hool returned to school to finish his studies. For two summer periods we have worked together to improve this cooperative service and we hope the forest industries and the states come to feel the benefits of our joint labors. Jim gave us special help in the construction of electronic data processing programs. One of these, an error check of tree detail cards, will appear in a later newsletter. It should be useful to Lake States and Central States companies having access to the 1620 computer.

The slow-moving irresistible forces of nature in the forest are of great importance in its management. Be sure these strong forces are understood, and do not pit your puny strength against them.

OLIVER MINING C.F.I. COMPLETION NEARLY ON SCHEDULE

Oliver Iron Mining will finish their two-year CFI project of 563 fifth-acre plots in the spring before growing season starts. About 50 samples remain to be completed on their 125,000 acre forest.

When the last tree is tallied on Port-A-Punch cards, there will be approximately 23,000 individual tree records to process on the Company's electronic data processing equipment. No previous case has ever averaged as high as 41 trees, 4.96" and larger in DBH, per fifth-acre plot. The intricate machine error-check devised by the Procedure Department has led to a rapid detection of many different field errors which otherwise might have gone unnoticed. Careful field checks, many devised by the crews themselves, have kept common field errors at a minimum. The numerous trees, presence of much Northern white cedar swamp, availability of only 2 crews, and but fair overall accessibility have delayed completion of the project until the spring of 1964.

The Company reports that the paint tubes have worked well, and that many new and interesting observations and impressions have been gained by the cruisers in the course of their travels.

THREE CREWS COMPLETE KIMBERLY-CLARK C.F.I. REMEASUREMENTS

Plot work in the Marenisco, Michigan and northern Wisconsin areas was completed in October by Kimberly-Clark Corporation cruisers. A total of 342 seventh-acre plots in batteries of two were remeasured at the rate of 3 plots per crew day. There were 22.3 trees per plot, or 156 trees per acre on the 109,000 acre area. Many plot center stakes were destroyed in logging but plot centers were reset without difficulty from the witness trees remaining.

Ed Haslerud of Norway, Michigan, Forest Management Supervisor and in charge of CFI, reports a favorable season for the field work. The roads were dry and drivable everywhere and little time was lost due to rain. The areas covered were quite accessible and all of this accounted for higher than averages rates of accomplishment.

RIFCO COMPUTING GETS UNDERWAY ON THE REM-RAND 80

The Rhinelander Paper Company completed its second year of remeasurements on 1,007 fifth-acre plots last fall. This year the Rem-Rand tree cards will be compiled for the entire project, the per tree computations having been finished in August. There were 28,000 tree cards to handle for the 66,200-acre area.

The record of growth on the computed cards for the total forest area has been summed up and found to exceed the total volume cut.

| <u>Growth Per Acre</u> <u>Per Year</u> | <u>Rhineland</u> <u>Block</u> | <u>Ashland</u> <u>Block</u> |
|---|----------------------------------|--------------------------------|
| Net cord growth and ingrowth | .379 | .471 |
| Mortality loss | -.073 | -.188 |
| Net growth per acre per year | .306 | .283 |
| Cut from the plots | .244 | .261 |
| Net growth-write off trees | .024 | .082 |
| Gross growth-cull trees | .003 | .008 |

The Ashland block was hit by the tentless tree caterpillar during the growing period, thus probably accounting in part for the heavy losses and the relatively heavy cut.

Final summation of details by silvicultural, administrative and operational breakdowns of the area will be completed soon on the Company's new Rem-Rand solid state 80.

MENOMINEE ENTERPRISES ERROR CHECKS 33,000 PAP CARDS IN 70 MINUTES

The 1401 computer was used last week to check the Port-A-Punch cards for the completed Menominee Enterprises CFI case. The program, prepared by Jim Hool and Dick Smith of the U. S. Forest Service, and Harry Thorne of the Wisconsin Conservation Department, did the job for over 900 fifth-acre sample plots in one hour and 10 minutes from the time the first card of the program entered the machine. Errors were simultaneously listed and a moderate number of manual corrections to the tree detail cards are now being made.

It is obvious this past decade,
that forest inventory is on the
march. Is it moving toward
natural biotic sampling or away
from it? Are foresters changing
merely for the sake of change?

"Man's restless mind is forever ranging,
He thinks he's advancing as long as he's changing."

CAL STOTT
Forester, Region 9
U. S. Forest Service